



The Easy Way to Automate Your Irrigation and Fertigation

- ✿ Oro Gem range of controllers allow you to automate the control and regulation of your pumps, valves and other hydraulic components in your drip or sprinkler system remotely from anywhere.
- ✿ Our industry leading controllers are suitable for open fields, orchards and greenhouses, delivering excellent crop performance and resource efficiency.



OroGEM Much More than a Controller. It's a Whole Operating System for Your Irrigation

All our controllers are connected to the Orogem OS, an intuitive visual work tool that makes it easier to plan, monitor and execute your irrigation with greater transparency and reliability. So you can minimize your operating costs while improving your yields with a lot less effort.

Irrigation Controllers

- ✦ A wide range of flexible and modular controllers, suitable for almost any type of applications like filter back flushing and fertigation.
- ✦ All irrigation controllers are modular and allow system expansion
- ✦ All irrigation controllers can be upgraded via Bluetooth.
- ✦ LoRa based RTU – Up to 2 km line of sight
- ✦ Weather station – Supplies weather data for irrigation and automatically shuts down the system during rain
- ✦ Analog inputs are available locally near the controller

Fertigation

- ✦ Allows both local and central fertilization sites, Upto 8 fertilizers channel per site
- ✦ Fertilizer dosage modes:
 - Continuous – Time (hh:mm:ss)
 - Volume – Litres Concentration (L/m3)
 - Proportional – proportion calculated from given amount of water and fertilizer
- ✦ Fertilizer dosage procedure: Pre-watering, Fertilizer injection, Post-watering

Irrigation Program

- ✦ Hundreds of irrigation programs can be configured to control irrigation lines, head units, and valves.
- ✦ Water dosing based on time, volume, or soil moisture.
- ✦ Irrigation scheduling features:
 - No Schedule – Manual on/off
 - Day count RTC with number of cycles
 - Run list for a given number of days and repeat till end date
 - Run/Skip Days
- ✦ Single cycle or pulse irrigation
- ✦ Start: by time, by condition, manually
- ✦ Each program allows irrigating single or multiple valves or sequence of valves or group of valves.
- ✦ Main valve operation can be delayed, advanced, or synchronized with irrigation

Backflush

- Allows both Local and central filter sites
- Flushing by time, by differential pressure or by both
- Definable parameters:**
Flushing interval, Pre dwell time, Dwell time, Flushing time, PD delay
- Endless looping detection and prevention
- Accumulation of flushing cycles by time and by PD

General

- ORO site configurator allows tailor fitting for each irrigation controller to site-specific irrigation needs
- Flexible condition systems allow starting, waiting, stopping and continuing of irrigation programs
- Detailed event log for all irrigation system available
- Controller configuration and irrigation programs are saved in non-volatile memory and backed up on cloud

Alarm

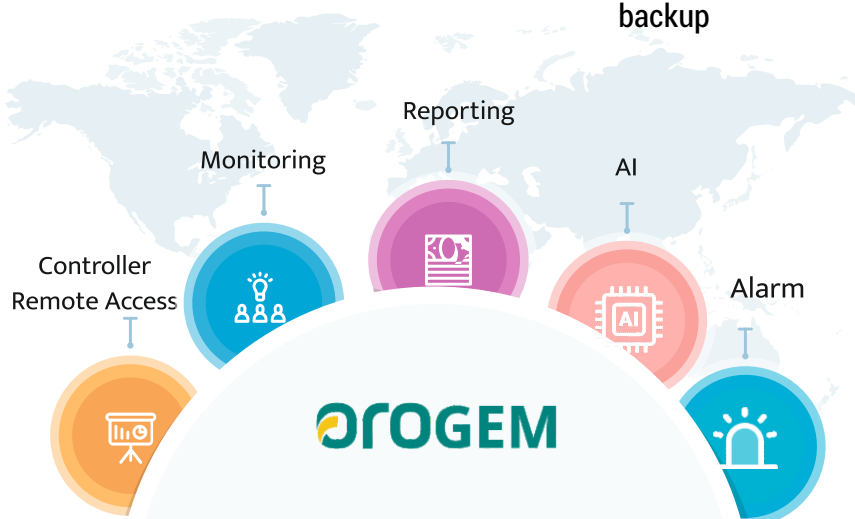
- High flow, Low flow, Low pressure, High Pressure, Water leakage
- Fertilizer leakage, No pulse from fertilizer injector
- PD Sensor failure
- Low battery, No Power Supply

Communication

- The ORO Gem+ OS seamlessly connects your controller, your sensors, and the cloud, making them accessible through your mobile device.
- ORO App for Web, Android, and iOS
- Possible communication channels: GSM, Wi-Fi, Ethernet cable

Power

- 12V DC from a solar panel and a rechargeable battery
- 220V AC with a rechargeable battery power backup



GEM LITE SERIES

SMALL SCALE FARMING



oro Shine

A reliable wired system that automates irrigation based on preset schedules. Ideal for consistent water delivery in farms and gardens, it reduces manual effort, ensures timely irrigation, and improves crop health with minimal infrastructure complexity.

Ordering Information

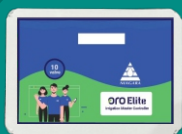
Model Number	Communication
OROSHINE(2V)	GSM
OROSHINE(4V)	GSM



2/4 VALVE



1 PUMP



oro Elite

A dependable wired irrigation system that operates on preset schedules, ensuring timely and consistent water delivery for farms and gardens. It minimizes manual labor, enhances crop health, and requires minimal infrastructure for effective operation.

Ordering Information

Model Number	Communication
OROELITE(10V)	GSM



10 VALVE



1 PUMP



oro NOVA

A smart, sensor-based system that automates irrigation and fertigation through wired or wireless control, enabling precise water and nutrient delivery. Increases efficiency, saves labor, and supports sustainable farming across all crop types.

Ordering Information

Model Number	Communication
ORONOVA(08V)	GSM / Wi-Fi
ORONOVA(16V)	GSM / Wi-Fi
ORONOVA(08V)	LoRa / GSM & Wi-Fi
ORONOVA(16V)	LoRa / GSM & Wi-Fi



08/16 VALVE



2 PUMP



Communication
LoRa -RF



oro RTU

GEM SERIES

MEDIUM SCALE FARMING

5



oro GEM (R)

High performance automation that doesn't compromise on flexibility. Acts as the master controller for small farms.



Ordering Information

Model Number	Communication
OROGEM(R)	RS485



oro GEM (RL)

High performance automation that doesn't compromise on flexibility. Acts as a Master Device for Medium Farms.

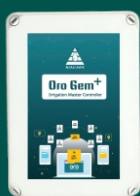


Ordering Information

Model Number	Communication
OROGEM(RL)	RS485, GSM & LoRa

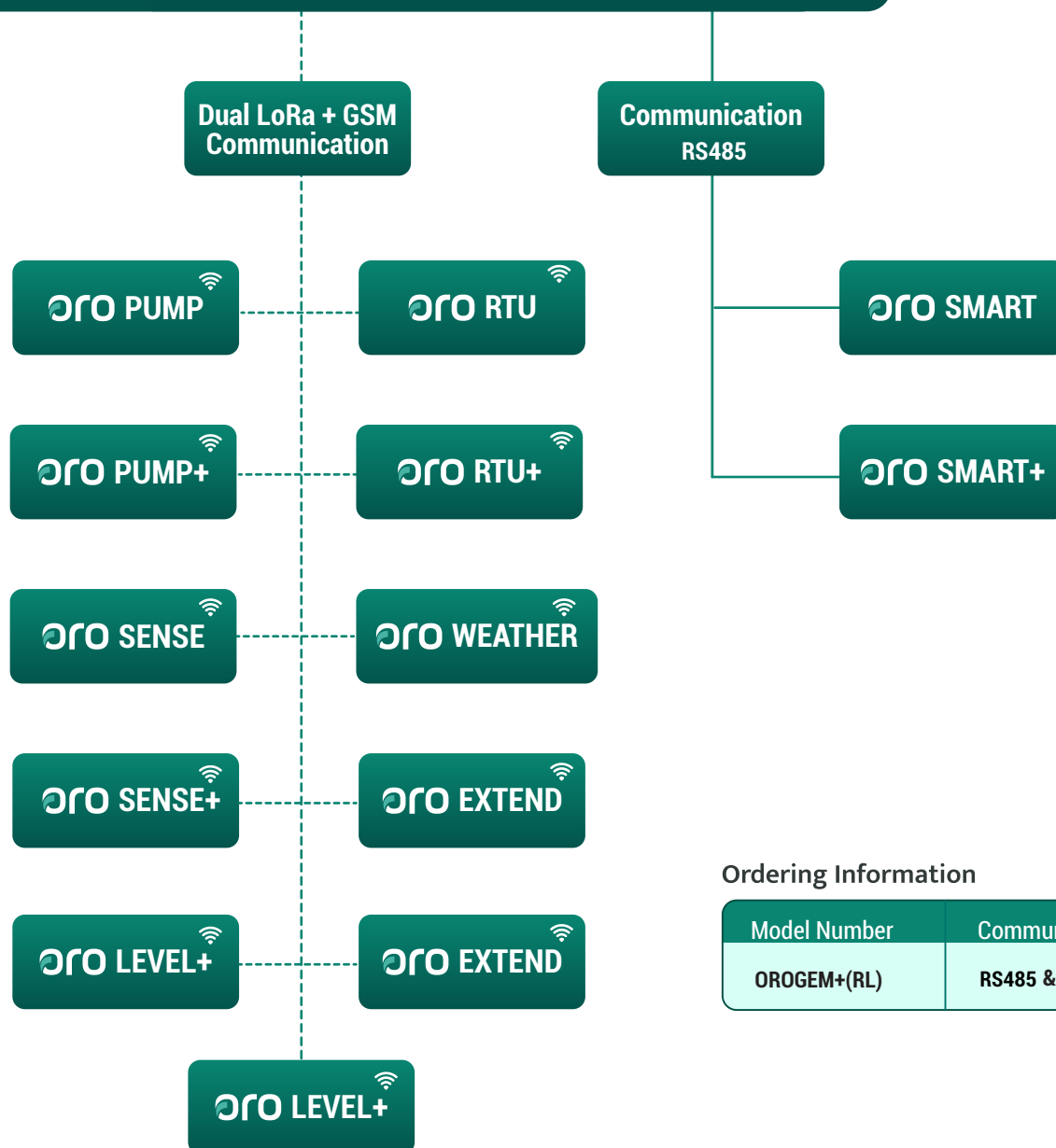
GEM+ SERIES

LARGE SCALE FARMING



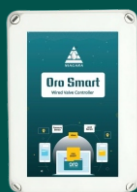
oro GEM+ (RL)

High performance automation that doesn't compromise on flexibility. Acts as a Master Device for **Large Farms**.



Ordering Information

Model Number	Communication
OROGEM+(RL)	RS485 & LoRa



oro Smart

The simple and flexible solution for automating your irrigation pump and valves, also functions as a slave device.



8 Relay Outputs
(Valves/Pumps)



4 Analog Inputs (ADC)
Pressure / Level Sensor

(optional)



Input ADC : 2Nos
pH Sensor

(optional)



Communication
RS485

Ordering Information

Model Number	Communication	Description
OS4R	RS485	4 Relay
OS8R	RS485	8 Relay
OS4RADC	RS485	4 Relay with 4 to 20 mA
OS8RADC	RS485	8 Relay with 4 to 20 mA
OS4RPH	RS485	4 Relay with PH



oro Smart+

The simple and flexible way to automate your irrigation pump, valve, filtration and fertigation. Acts as a slave device.



Output : 16 Nos
Valves/Pumps



Input ADC : 4Nos
Pressure / Level Sensor



Digital Input : 2Nos
Pulse Flow Meter
Pressure Switch



Input ADC : 2Nos
EC Sensor

(optional)

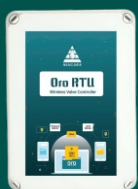


Communication
RS485
WIFI/GPRS

Ordering Information

Model Number	Communication	Description
OSP8R	RS485	8 Relay with 4 to 20mA Digital Input
OSP16R	RS485	16 Relay with 4 to 20mA Digital Input
OSP16RADC	RS485	16 Relay with 4 to 20mA Digital Input, EC





ORO RTU

The simple and flexible way to automate your irrigation valves. Acts as a slave device.



Communication
LoRa-RF



Output : 4/8 Nos
Latch Valves



Input ADC : 4Nos
Pressure / Level Sensor
Level 4-20 mA

(optional)

Ordering Information

Model Number	Communication	Description
ORTU4L	LoRa	4 Latch
ORTUM4L	LoRa	4 Latch
ORTU4LADC	LoRa	4 Latch with 4-20mA
ORTU8L	LoRa	8 Latch
ORTU8LADC	LoRa	8 Latch with 4-20mA



ORO Gem+



ORO RTU+

The simple and flexible way to automate your irrigation valves with soil moisture data. Acts as a slave device.



Communication
LoRa-RF



Output : 4 Latch



Input ADC : 4Nos
Moisture Sensors,
Soil Temperature



Input ADC : 4 No.
Pressure/ Level

(Optional)



ORO Gem+

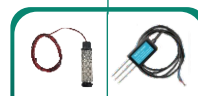
Ordering Information

Model Number	Communication	Description
ORTUP4LSMST	LoRa	4 Latch, 4 Soil Moisture With Soil Temperature
ORTUP4LSMSTADC	LoRa	4 Latch, 4 Soil Moisture With Soil Temperature, 4-20mA



Oro Sense

The simple and flexible way to get soil moisture and temperature data and automate your irrigation. Acts as slave device.



Input ADC : 4 No
Moisture Sensors,
Soil Temperature



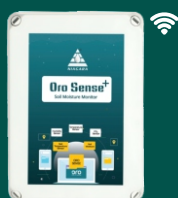
Communication
LoRa-RF

Ordering Information

Model Number	Communication	Description
OSMST	LoRa	4 Soil Moisture with 1 Soil Temperature



Oro Gem+



Oro Sense +

The simple and flexible way to get soil moisture, temperature, and CO₂ sensor integration and automate your irrigation, Acts as a slave device.



Input ADC : 4 No
Moisture Sensors,
Soil Temperature



Input ADC : 4 No
Humidity, Temperature
and CO₂ Sensor

(Optional)



Communication
LoRa-RF

Ordering Information

Model Number	Communication	Description
OSMST OHT-CO2	LoRa	4 Soil Moisture with 1 Soil Temperature, Humidity, Temperature and CO ₂ sensor integration

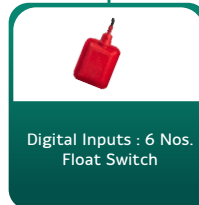


Oro Gem+



Oro Level

The simple and flexible way to get water level data and automate your irrigation.
Acts as slave device.



Communication
LoRa-RF



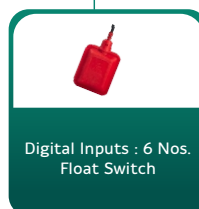
Ordering Information

Model Number	Communication	Description
OLEVELDADC	LoRa	Level Float



Oro Level+

The simple and flexible way to get water level data, monitor four latching valve outputs and 1 pressure sensor, and automate your irrigation.
Acts as a slave device.



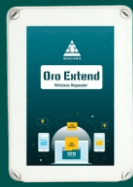
Communication
LoRa-RF



Ordering Information

Model Number	Communication	Description
OLEVEL4LDADC	LoRa	4 Latch, Level / Pressure, Float





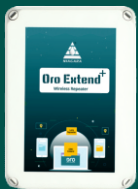
Oro Extend

The simple and flexible way to boost Lora RF signal and extend the range of the device. Acts as slave device.

Ordering Information

Model Number	Communication	Description
OEXTEND	LoRa	LoRa Repeater

Communication
LoRa-RF



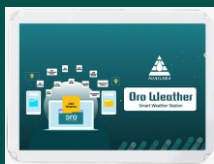
Oro Extend+

The simple and flexible way to extend device connectivity using LoRa and GSM communication. Acts as a slave device.

Ordering Information

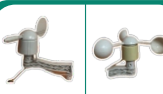
Model Number	Communication	Description
OEXTEND	GSM, LoRa & RS485	LoRa Repeater

Communication
LoRa-RF



Oro Weather

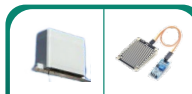
The simple and flexible way to get weather data and automate your irrigation. Acts as a standalone and slave device.



Wind Direction
Wind Speed sensor



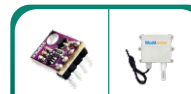
CO2, LUX



Rainfall,
leaf wetness sensor



Input: 5 No
4-Soil Moisture Sensor
1-Soil Temperature



Input
Humidity/Temperature
Atmospheric pressure

Communication
RS485/GPRS/
LoRa-RF



Ordering Information

Model Number	Communication	Description
OWSGSM	GSM	Weather Station using GSM
OWSLORA	LoRa	Weather Station using LoRa



Oro Gem+





oro Pump

The simple and flexible way to automate your irrigation pump. Acts as standalone or slave device.



Communication
GPRS / LoRa-RF



5 Relay Outputs
(Supports up to
3 Pumps)



Voltage Protection
Three-Phase
Current Sensing



Ordering Information

Model Number	Communication	Description
OPUMPGSM	GSM	Pump Controller with GSM
OPUMLORA	LoRa	Pump Controller with LoRa



oro Gem+



oro Pump+

The simple and flexible way to automate your irrigation pump. Acts as standalone or slave device.



Communication
GPRS / LoRa-RF



5 Relay Outputs
(Supports up to
3 Pumps)



Digital Inputs : 6 Nos
Float Switch/
Pulse Flow Meter



ADC Inputs : 1No. Each
1 Pressure/ 1 Level
4/20mA

(Optional)



Voltage Protection
Three-Phase
Current Sensing



Ordering Information

Model Number	Communication	Description
OPUMPGSMADC	GSM	GSM Pump Controller with ADC
OPUMLORAADC	LoRa	LoRa Pump Controller with ADC



oro Gem+



Niagara 100 Series

Plastic hydraulic/Electric Control Valves for residential, commercial and agricultural irrigation systems. The Niagara 100 Series plastic control valves are globe pattern 2". These control valves provide superior hydraulic high flow performance, demonstrating state-of-the-art technology.

Ordering Information

Model Number	Description
NVDN50	Niagara Oro valve 100 series 2" Threaded



Niagara 200 Series

A unitized flexible super-travel diaphragm & guided plug provide a signification 'look through' passage resulting in accurate & stable regulation and ultra-high flow capacity. The Valve unique body design allows on-site adaptation .Its articulated flange connections isolate the valve from pipeline bending & pressure stresses.

Ordering Information

Model Number	Description
NVDN80T	Niagara Oro valve 200 series 3" Threaded
NVDN100F	Niagara Oro valve 200 series 4" Threaded



Niagara 300 Series

A precision-engineered Pressure Control Valve delivers consistent downstream pressure across varying flow conditions. Its balanced internal design ensures smooth operation, reduced wear, and reliable performance. Robust construction and easy maintenance make it ideal for demanding water distribution applications.

Ordering Information

Model Number	Description
NVDN50-D	Niagara Oro valve 300 series 2" Threaded
NVDN60-D	Niagara Oro valve 300 series 2.5" Threaded



Niagara Quick Pressure Relief Valve

Niagara PRV is a hydraulically operated, diaphragm actuated control valve designed to relief excessive line pressure when it rises above the preset maximum. It responds to rises in system pressure immediately, accurately and with high repeatability, by opening fully. The Niagara PRV provides smooth drip tight closing.

Ordering Information

Model Number	Description
NPRVDN50T	Pressure relief valve 2" Threaded
NPRVDN80T	Pressure relief valve 3" Threaded
NPRVDN100F	Pressure relief valve 4" Flange



Niagara Pressure Sustaining Valve

The Niagara PSV is a Hydraulically operated, diaphragm actuated control valve that sustains minimum preset upstream (back) pressure and opens fully when line pressure is in excess of setting.

Ordering Information

Model Number	Description
NPSVDN50T	Niagara Pressure sustaining valve 2" Threaded
NPSVDN80T	Niagara Pressure sustaining valve 3" Threaded
NPSVDN100F	Niagara Pressure sustaining valve 4" Flanged



Niagara Pressure relief-Sustaining Pilot

This is a 2-way direct acting pilot valve, actuated by a pressure responsive diaphragm, which seeks to reach equilibrium between hydraulic and set spring forces. When used in a pressure relief/sustaining circuit, the pilot opens at upstream pressure rises above set point.

Ordering Information

Model Number	Description
NPSP 1 - 6	Niagara Pressure Sustaining Pilot Valve, 1-6 bar



3-Way Solenoid with Hydraulic Base

The 3-way solenoid with hydraulic base is a compact 3 Way Solenoid Pilot Valve that can control valves independently or in combination with other control circuit accessories. It excels in its low power consumption and low sensitivity to dirt and voltage variations. The hydraulic base features a manual override and consists of a bracket for attaching to the valve or to a solenoid manifold.

Ordering Information

Model Number	Description
O3WS24VDC	3 way solenoid, 24 VDC
O3WS24VAC	3 way solenoid, 24 VAC
OSW9VDC-L	Magnetic Latch solenoid 9-20VDC



Oro Pressure Transmitter

The Oro Pressure Transmitter is a highly stable and reliable pressure sensor used for measuring water pressure in the irrigation line and water distribution systems.

Ordering Information

Model Number	Description
OROPS10	Oro Pressure transmitter, Range:0-10 bar, Output signal 4 - 20 mA



Oro Level Transmitter

The Oro Level Transmitter is used to determine the level of a tank, cistern or cavity, to accurately monitor variations in the level of the liquid.

Ordering Information

Model Number	Description
OROLPS015	Oro Level transmitter, Range:0-15 mtr, Output signal 4 - 20 mA
OROLPS035	Oro Level transmitter, Range:0-35 mtr, Output signal 4 - 20 mA
OROLPS100	Oro Level transmitter, Range:0-100 mtr, Output signal 4 - 20 mA



Oro Float Switch

The Oro Float, a liquid or water level float switch, is suitable for level switching of various liquids, sewage in shafts, tanks, basins or cisterns. The switching differential of the level switch is adjustable by the position of the included counterweight on the cable. It is a simple-to-use water level float switch.

Ordering Information

Model Number	Description
OROFLS102	Niagara float switch with 2m cable
OROFLS104	Niagara float switch with 4m cable
OROFLS108	Niagara float switch with 8m cable



oro Soil Moisture Sensor

The Oro granular matrix soil moisture sensor is suitable for soil moisture sensing of various soil types for agricultural needs. Oro soil moisture sensor is designed to be placed in the various soil types for monitoring soil conditions.

Ordering Information

Model Number	Description
OROSMS105	Oro Soil Moisture Sensor with 5 Metre Cable



oro Electrical Conductivity Sensor

Oro Electrical conductivity sensors are ideal for measuring the concentration of dissolved solid in water. They are provided with an accurate predetermined factory calibration constant for agricultural needs. Conductivity is measured by applying an alternating current to a measuring cell. This cell comprises a glass body supporting two to four platinum plates (also called poles) immersed in a solution.

Ordering Information

Model Number	Description
OROECS100	Oro Electrical conductivity sensor, 0 to 10000 $\mu\text{S}/\text{cm}$



oro PH Sensor

Oro PH sensor model Oro PH IS designed for various Industrial Applications. Four ceramic junction reference aids in the sensor's Resistance to harsh Environments and helps prolong sensor life for agricultural needs. The robust sensor design makes the Oro PH reliable in a wide range of aqueous solution found in pipelines, open tanks or ponds.

Ordering Information

Model Number	Description
OROPHS100	Oro PH Sensor, 0 to 14 PH

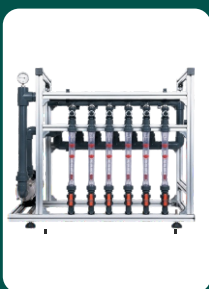


oro FertiGem 3 Channel

The FertiGem 3 Channel is a fully configurable fertilizer and acid dosing unit with the intuitive Oro Gem+ controller for precise fertigation. Supporting up to 3 dosing channels, it optimizes water flow and pressure to deliver accurate nutrients, improve crop productivity, reduce fertilizer wastage, and manage both local and remote irrigation devices efficiently.

Ordering Information

Model Number	Description
FERTIGEM200	Double Channel fertilizer Dosing Unit



oro FertiGem 6 Channel

The FertiGem 6 Channel is a fully configurable fertilizer and acid dosing unit with the intuitive Oro Gem+ controller for precise fertigation. Supporting up to 6 dosing channels, it optimizes water flow and pressure to deliver accurate nutrients, improve crop productivity, reduce fertilizer wastage, and manage both local and remote irrigation devices efficiently.

Ordering Information

Model Number	Description
FERTIGEM500	Six Channel Fertilizer Dosing Unit

Spares Ordering Information

Model Number	Description
OROVENTURI600	Venturi
OROVENTURI1000	Venturi
OROROTA400	Rotameter
OROROTA1000	Rotameter
OROSOLENROID10W	Solenoid Coil 10W AC
ORONEEDLEVALVE	Needle Valve



Pulse Flow Meter

Uses a multi-blade plastic paddle mounted at the top of the water passage, where disturbance from solid suspended in the water is minimal, Provides accurate flow measurement, while handling water containing suspended solids, Low head loss, Magnetic drive.

Ordering Information

Model Number	Description
PFM2	Pulse Flow Meter, 2", Max 24 V AC/DC
PFM3	Pulse Flow Meter, 3", Max 24 V AC/DC
PFM4	Pulse Flow Meter, 4", Max 24 V AC/DC



Electromagnetic Flow Meter

Electromagnetic flow meters do not have any moving parts, allowing for the measurement of flow without any physical obstruction, thereby eliminating potential pressure drops or blockages. Electromagnetic flow meters are renowned for their accuracy

Ordering Information

Model Number	Description
EMFM2	ElectroMagnetic Flow Meter, 2", Max 230V AC/ 24V DC, RS485, 4-20mA
EMFM3	ElectroMagnetic Flow Meter, 3", Max 230V AC/ 24V DC, RS485, 4-20mA
EMFM4	ElectroMagnetic Flow Meter, 4", Max 230V AC/ 24V DC, RS485, 4-20mA

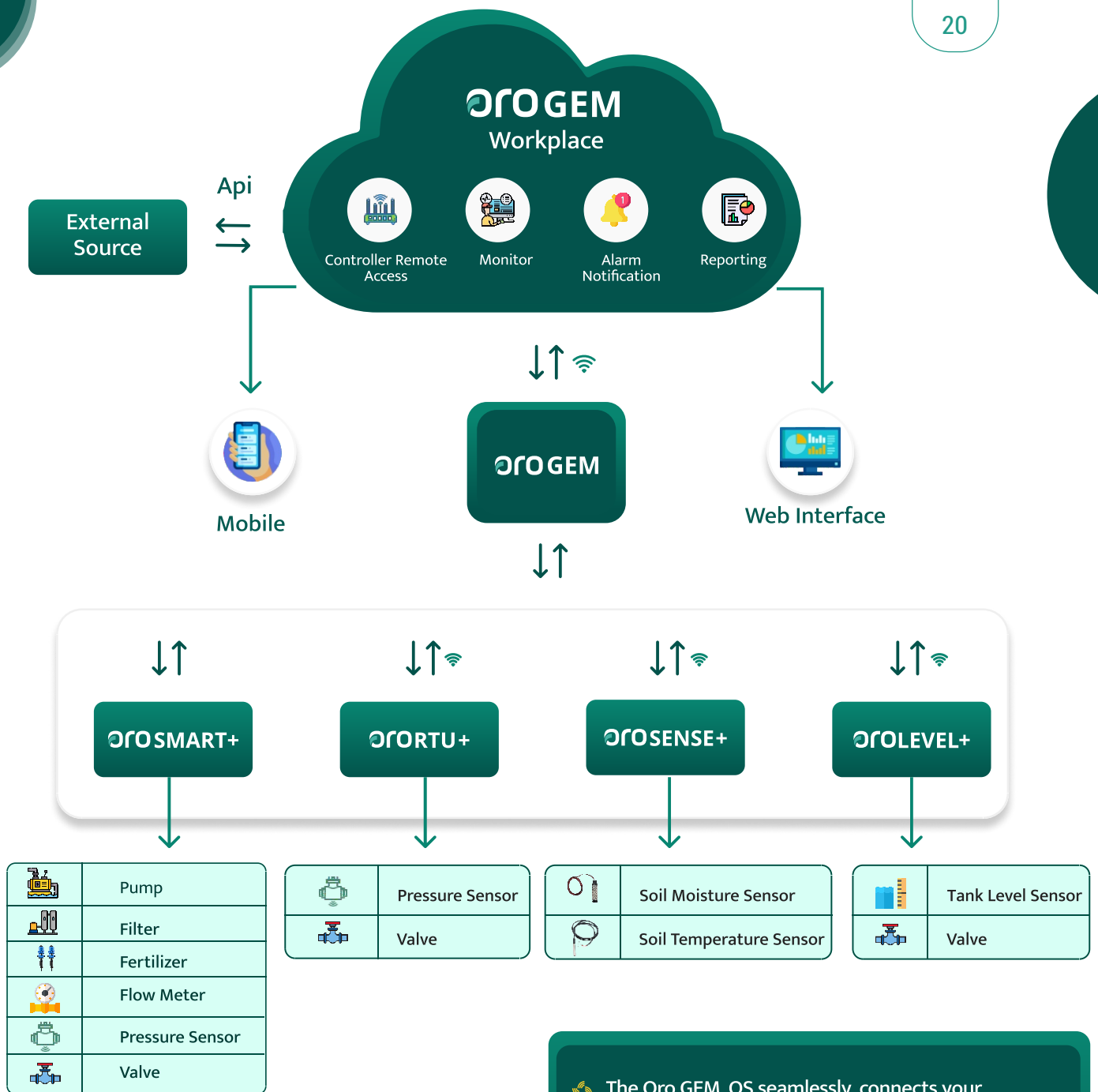


BackFlush Valves

Backflush Valves are designed for automatic backflushing of filters. We offer plastic and iron hydraulically operated backflush valves to fit both disc and sand media filters.

Ordering Information

Model Number	Description
BFV2	Backflush Valve, 2", Bermad/Automat
BFV3	Backflush Valve, 3", Bermad/Automat
BFV4	Backflush Valve, 4", Bermad/Automat



The Oro GEM OS seamlessly connects your controller, to your sensors, to the cloud and accessible with your mobile device.



Offering a seamless way to manage your irrigation.



NIAGARA SOLUTIONS PRIVATE LIMITED

SF No 225/1, VRS Nagar, Cheran Maanagar,
Vilankurichi, Coimbatore - 641 035.



+91 93630 05100,
+91 98425 05100



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Toll Free
1800 313 7100



www.niagarasolutions.co.in



info@niagarasolutions.co.in